filtering, interframe differencing, interimage distance computation, Hough transformation, motion blurring and bilinear interpolation .

31. (New) The distribution medium in Claim 27, wherein the source image data is stored as the destination image data in the second rendering step.

REMARKS

An Office Action was mailed on September 25, 2002. Claims 1 – 27 are pending in the present application. Claims 19 – 27 are allowed. Applicant cancels claims 3, 4, 12 and 13 without prejudice or disclaimer, amends claims 1, 5, 8 – 10, 14, 17 and 18 and adds new claims 28-31. No new matter is introduced.

OBJECTED CLAIMS

Applicant thanks the Examiner for indicating that claims 4, 5, 13 and 14 are rejected as being dependent on a rejected base claim, but that each would be allowable if rewritten to included all limitations from its associated base claim and all intervening claims. Applicant cancels claim 4, incorporates the limitations of canceled claim 4 in amended claim 1, and amends claim 5 to depend from amended claim 1. Similarly, Applicant cancels claim 13, incorporates the limitations of canceled claim 13 in amended claim 10, and amends claim 14 to depend from amended claim 10. Accordingly, Applicant respectfully submits that claims 5 and 14 are in condition for allowance, and respectfully requests that this objection be withdrawn.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 1 – 3, 6 – 12, and 15 – 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's admitted prior art (AAPA) in view of U.S. Patent

5,757,374 to Nakamura et al.. Applicant cancels claims 3, 4, 12 and 13 without prejudice or disclaimer, amends claims 1, 5, 8 – 10, 14, 17 and 18, and respectfully traverses this rejection.

Applicant's claimed invention, as represented by independent claims 1, 8, - 10, 17 and 18, discloses an image processing device and method that stores source image data in units of pixels in a first storage means and destination image data in units of pixels in a second storage means, and renders destination image pixels employing a rendering means that performs a stipulated pixel-unit operation to source image data repeatedly in units of polygons until a stipulated arithmetic result is obtained. With this Response, Applicant amends independent claims 1, 8 – 10, 17 and 18 to include the limitations of canceled claims 4, 13 disclosing specifying means for specifying an operation mode between the source image data and the destination image data, specifying either a first mode for adding source image data to destination image data or a second mode for subtracting source image data from destination image data.

As the Examiner acknowledges in the present Office Action that the prior art of record fails to teach or suggest, either alone or in combination, Applicant's claimed specification means, Applicant respectfully submits that amended independent claims 1, 8 – 10, 17 and 18 are in condition for allowance. As claims 2, 6, 7, 11, 15 and 16 each depend from one of claims 1 and 10, Applicant further submits that claims 2, 6, 7, 11, 12, 15 and 16 are allowable for at least this reason.

CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that claims 1, 2, 5 – 11 and 14 – 27, including independent claims 1, 8 - 10, 17 – 19, 26 and 27 and the

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claims that depend therefrom, stand in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Attached is a marked up version of the changes made to the specification and claims by the current amendment. The attached pages are captioned **"Version With Markings To Show Changes Made"**.

Any fee due with this paper may be charged on Deposit Account 50-1290.

Respectfully submitted,

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TJB:pm

IN THE CLAIMS

Please cancel claims 3, 4, 12 and 13 without prejudice or disclaimer

Please amend claims 1, 5, 8 – 10, 14, 17 and 18:

1. **(Amended)** An image processing device comprising:

[a] first storage means for storing source image data in units of pixels;

[a] second storage means for storing destination image data in units of pixels;

[and]

[a] rendering means for performing an action of applying a stipulated pixel-unit operation to the source image data stored in said first storage means and rendering the data as destination image data in the second storage means in units of polygons repeatedly until a stipulated arithmetic result is obtained; and

means for specifying an operation mode between said source image data and said destination image data,

wherein said means for specifying specifies as said operation mode either a first mode wherein said source image data is added to said destination image data, or a second mode wherein said source image data is subtracted from said destination image data.

2. **(Unchanged)** The image processing device recited in Claim 1, wherein the source image data stored in said first storage means is image data output from a video camera.

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5. **(Amended)** The image processing device recited in [Claim 4] <u>Claim 1</u>, wherein said [specification means] <u>means for specifying</u> further specifies as said operation mode a third mode wherein said source image data is stored as said destination image data in said second storage means.

6. **(Unchanged)** The image processing device recited in Claim 1, wherein said stipulated operation is one of convolution filtering, pyramid filtering, interframe differencing, interimage distance computation, Hough transformation, motion blurring or bilinear interpolation.

7. **(Unchanged)** The image processing device recited in Claim 1, wherein said image processing device is a computer entertainment device.

8. **(Amended)** An image processing method in an image processing device including:

[a] first storage means that stores source image data in units of pixels, and [a] second storage means that stores destination image data in units of pixels comprising:

the image processing method comprising:

a rendering step wherein the action of applying a stipulated pixel-unit operation to the source image data stored in said first storage means and rendering the data as destination image data in the second storage means in units of polygons is performed repeatedly until a stipulated arithmetic result is obtained<u>; and</u>

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a specifying step of specifying an operation mode between said source image data

and said destination image data by specifying as said operation mode either a first mode

wherein said source image data is added to said destination image data, or a second mode

wherein said source image data is subtracted from said destination image data.

9. **(Amended)** A distribution medium used in an image processing device including a

first storage means that stores source-image image data in units of pixels, and a second

storage means that stores destination image data in units of pixels;

said distribution medium is used to distribute a program that executes processing

comprising:

a rendering step wherein an action of applying a stipulated pixel-unit operation to

the source image data stored in said first storage means and rendering the data as

destination image data in the second storage means in units of polygons is performed

repeatedly until a stipulated arithmetic result is obtained; and

a specifying step of specifying an operation mode between said source image data

and said destination image data by specifying as said operation mode either a first mode

wherein said source image data is added to said destination image data, or a second mode

wherein said source image data is subtracted from said destination image data.

10. **(Amended)** An image processing device comprising:

storage means comprising a first storage unit that stores source image data in units

of pixels and a second storage unit that stores destination image data in units of pixels;

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a generation means that generates rendering commands that cause the action of applying a stipulated pixel-unit operation to the source image data stored in said first storage means and rendering the data as destination image data in the second storage means in units of polygons to be performed repeatedly until a stipulated arithmetic result is obtained; [and]

an execution means that executes rendering commands generated by said generation means; and

means for specifying an operation mode between said source image data and said destination image data,

wherein said means for specifying specifies as said operation mode either a first mode wherein said source image data is added to said destination image data, or a second mode wherein said source image data is subtracted from said destination image data.

11. **(Unchanged)** The image processing device recited in Claim 10, wherein the source image data stored in said first storage means is image data output from a video camera.

14. **(Amended)** The image processing device recited in [Claim 13] Claim 10, wherein said [specification] means for specifying further specifies as said operation mode a third mode wherein said source image data is stored as said destination image data in said second storage means.

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15. **(Unchanged)** The image processing device recited in Claim 10, wherein said stipulated operation is selected from the group consisting of convolution filtering, pyramid filtering, interframe differencing, interimage distance computation, Hough transformation, motion blurring and bilinear interpolation.

16. **(Unchanged)** The image processing device recited in Claim 10, wherein said image processing device is a computer entertainment device.

17. **(Amended)** An image processing method in an image processing device which has storage units that store image data, comprising:

a storage step wherein source image data is stored in a first storage unit in units of pixels and also destination image data is stored in a second storage unit in units of pixels; and

a generation step of generating rendering commands that cause the action of applying a stipulated pixel-unit operation to the source image data stored in said first storage means in said storage step and rendering the data as destination image data in the second storage means in units of polygons to be performed repeatedly until a stipulated arithmetic result is obtained; and

a specifying step of specifying an operation mode between said source image data and said destination image data by specifying as said operation mode either a first mode wherein said source image data is added to said destination image data, or a second mode wherein said source image data is subtracted from said destination image data.

18. **(Amended)** A distribution medium used in an image processing device that has storage units that store image data, to distribute a program that executes processing, the distribution medium comprising:

a storage step wherein source image data is stored in a first storage unit in units of pixels and also destination image data is stored in a second storage unit in units of pixels; [and]

a generation step of generating rendering commands that cause the action of applying a stipulated pixel-unit operation to the source image data stored in said first storage unit in said storage step and rendering the data as destination image data in the second storage unit in units of polygons to be performed repeatedly until a stipulated arithmetic result is obtained; and

a specifying step of specifying an operation mode between said source image data and said destination image data by specifying as said operation mode either a first mode wherein said source image data is added to said destination image data, or a second mode wherein said source image data is subtracted from said destination image data.

19. **(Unchanged)** An image processing device comprising:

a first storage means that stores source image data in units of pixels;

a second storage means that stores destination image data in units of pixels;

a first rendering means that performs one portion of the operations among some stipulated pixel-unit operations to the source image data stored in said first storage means

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and renders the data as destination image data in the second storage means in units of polygons; and

a second rendering means that performs another portion of the operations among some stipulated pixel-unit operations to the source image data stored in said first storage means, adds or subtracts this data to or from the image data already rendered by said first rendering means and renders the data as destination image data in the second storage means in units of polygons.

20. **(Unchanged)** The image processing device recited in Claim 19, wherein the source image data stored in said first storage means is image data output from a video camera.

21. **(Unchanged)** The image processing device recited in Claim 19, and further comprising specification means for specifying the operation mode between said source image data and said destination image data.

22. **(Unchanged)** The image processing device recited in Claim 21, wherein said specification means specifies as said operation mode either a first mode wherein said source image data is added to said destination image data, or a second mode wherein said source image data is subtracted from said destination image data.

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23. **(Unchanged)** The image processing device recited in Claim 22, wherein said specification means further specifies as said operation mode a third mode wherein said source image data is stored as said destination image data in said second storage means.

24. **(Unchanged)** The image processing device recited in Claim 19, wherein said stipulated operation is selected from the group consisting of convolution filtering, pyramid filtering, interframe differencing, interimage distance computation, Hough transformation, motion blurring or bilinear interpolation.

25. **(Unchanged)** The image processing device recited in Claim 19, wherein said image processing device is a computer entertainment device.

26. **(Unchanged)** An image processing method in an image processing device including a first storage means that stores source image data in units of pixels, and a second storage means that stores destination image data in units of pixels, the image processing method comprising:

    a first rendering step wherein one portion of the operations among some stipulated pixel-unit operations are performed on the source image data stored in said first storage means and the data is rendered as destination image data in the second storage means in units of polygons; and

    a second rendering step wherein another portion of the operations among some stipulated pixel-unit operations are performed on the source image data stored in said first

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storage means, this data is added to or subtracted from the image data already rendered in said first rendering step and the data is rendered as destination image data in the second storage means in units of polygons.

27. **(Unchanged)** A distribution medium used in an image processing device including a first storage means that stores source image data in units of pixels, and a second storage means that stores destination image data in units of pixels, the distribution medium being used to distribute a program that executes processing comprising:

a first rendering step wherein one portion of the operations among some stipulated pixel-unit operations are performed on the source image data stored in said first storage means and the data is rendered as destination image data in the second storage means in units of polygons; and

a second rendering step wherein another portion of the operations among some stipulated pixel-unit operations are performed on the source image data stored in said first storage means, this data is added to or subtracted from the image data already rendered in said first rendering step and the data is rendered as destination image data in the second storage means in units of polygons.

Please add new claims 28 – 31 :

28. **(New)** The image processing method recited in Claim 26, wherein said stipulated pixel unit operations are selected from the group consisting of convolution filtering, pyramid filtering, interframe differencing, interimage distance computation, Hough transformation, motion blurring and bilinear interpolation.

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29. **(New)** The image processing method recited in Claim 26, wherein the source image data is stored as the destination image data in the second rendering step.

30. **(New)** The distribution medium in Claim 27, wherein said stipulated pixel unit operations are selected from the group consisting of convolution filtering, pyramid filtering, interframe differencing, interimage distance computation, Hough transformation, motion blurring and bilinear interpolation

31. **(New)** The distribution medium in Claim 27, wherein the source image data is stored as the destination image data in the second rendering step.